1. GENERALITIES

Parameters concerned by the comparisons

EC355_AER

--> extinction coefficient at 355 nm

EC = OD in a grid box / thickness of this grid box

CONC_{AER/SO4/BC/POM/SS/DUST}

MEC550 _{AER/SO4/BC/POM/SS/DUST}

--> mass extinction coefficient at 550 nm : MEC = LOAD / OD

RH_METEO

Units of the parameters

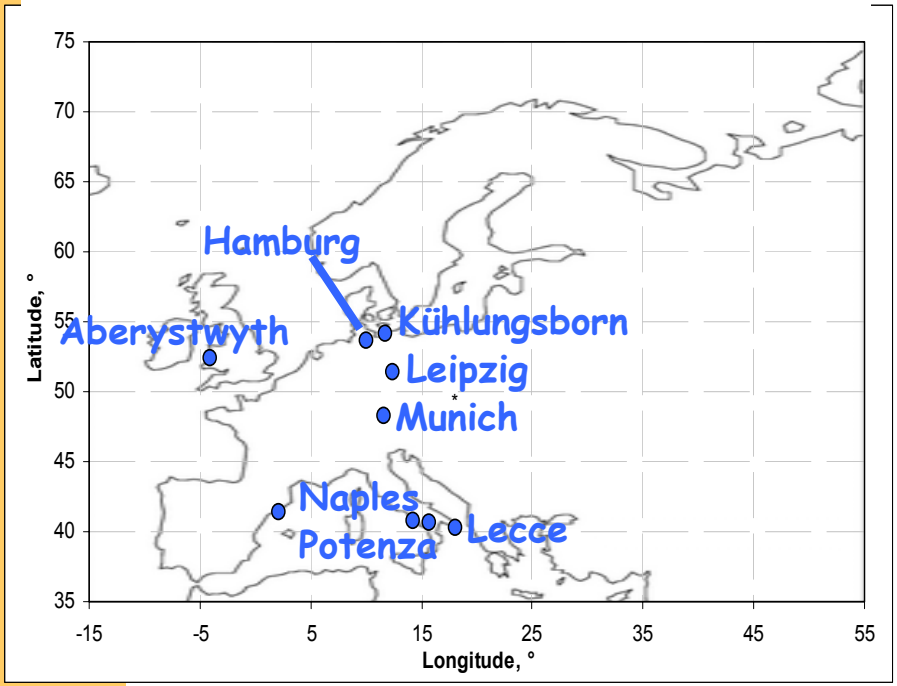
- Sulfate concentration in $\mu g(SO_4)/m^3$
- Organic carbon concentration in $\mu g(OC)/m^3$
- Black carbon concentration in $\mu gC/m^3$
- Extinction coefficient in $(Mm)^{-1}$
- Mass extinction coefficient in m^2/g

* Optical depth : clear sky or all sky ?

Information for each model written in /home/aerocom0/DOC/units/OD_units.txt

Lidar measurements

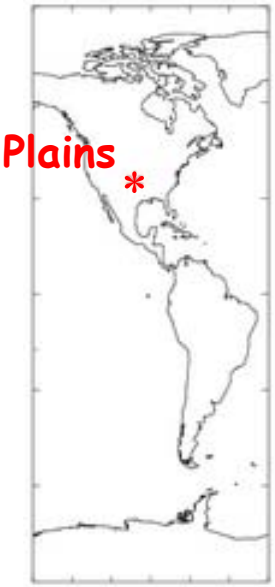
EARLINET stations



- Use of measurements for 2000 and 2001
- Measurements twice a week : Monday and Thursday
- Measurements at sunset
- Raman lidar : extinction coefficient without hypothesis on lidar ratio

ARM program

South Great Plains

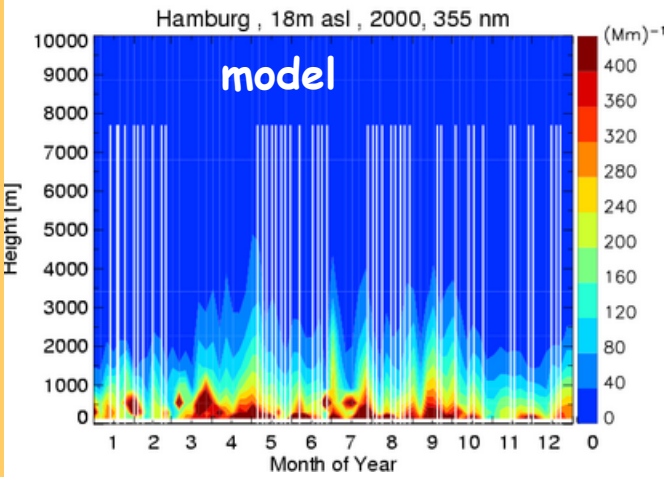


- Use of measurements for 2000 and 2001
- Measurements : each day (except specific months) each 10 minutes
- Measurements of : extinction coefficient, scattering ratio, backscatter coefficient, optical depth relative humidity, cloud detection

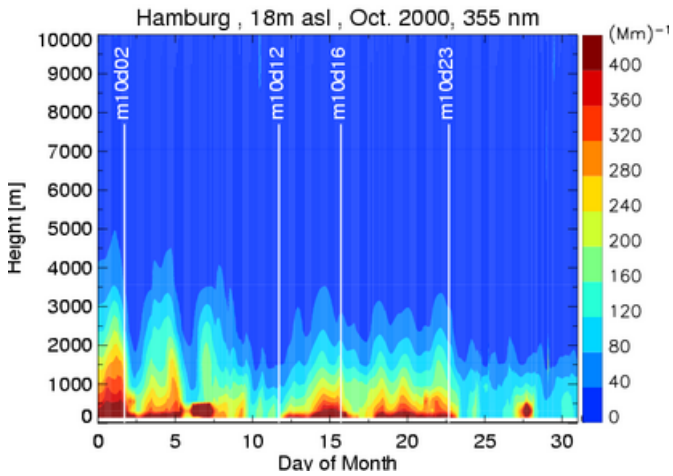
Plots (1) : EC355/BC355

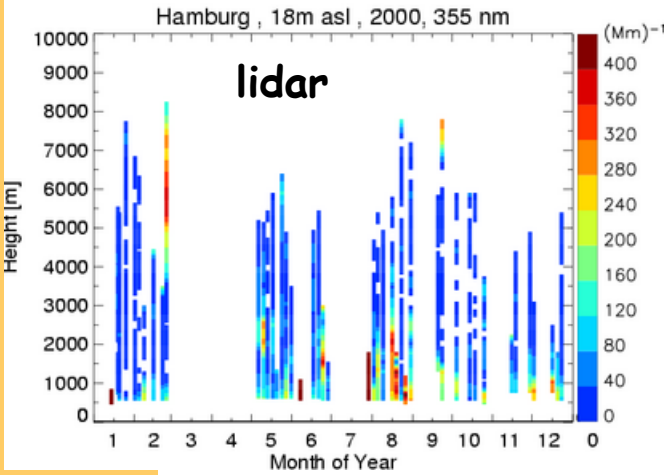
INCA only

SLICE : temporal evolution of profiles at each station



Exists for annual or monthly period





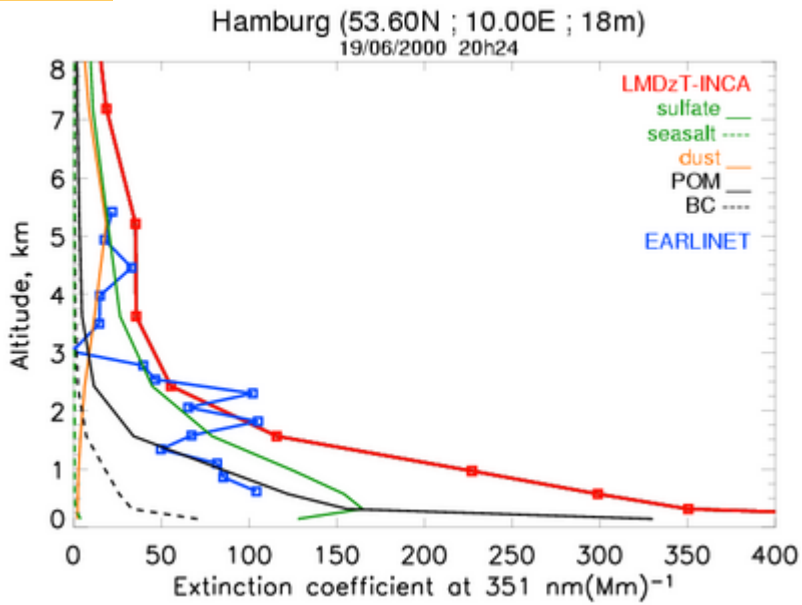
For lidar measurements, profiles of EC355 and BC355 (backscatter coefficient)

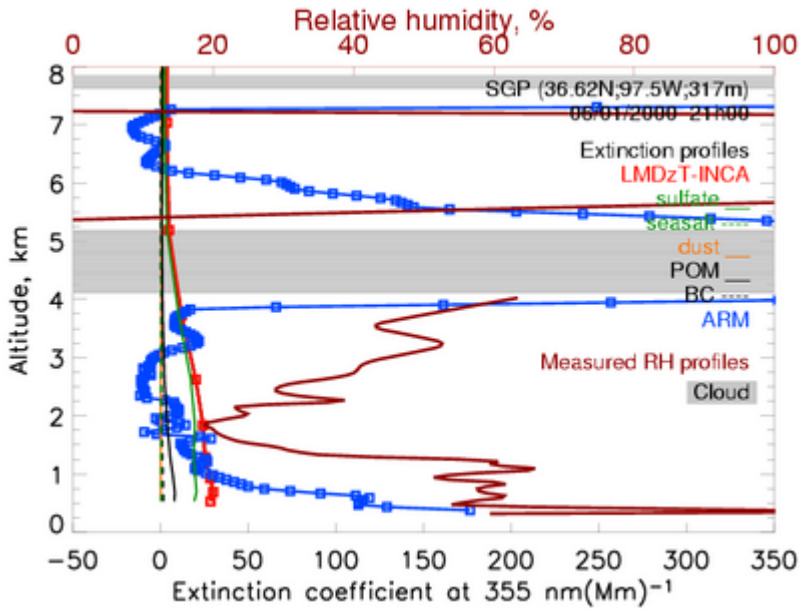
NAME = ${PARAM}_AER _an${year}_m${month}_${station}_SLICE.ps.png

Plots (2) : EC355

INCA only

PROFILE : comparison of simulated profiles for each species with measured total aerosol profiles at each station



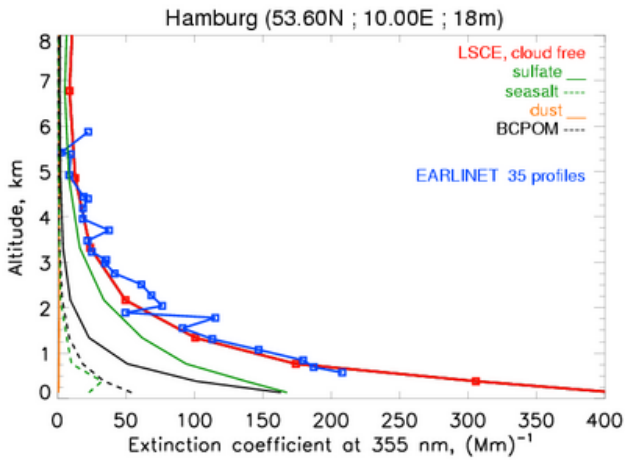


NAME =
EC355_AER _an${year}_m${month}d${day}_${station}_PROFILE.ps.png

Plots (3) : EC355

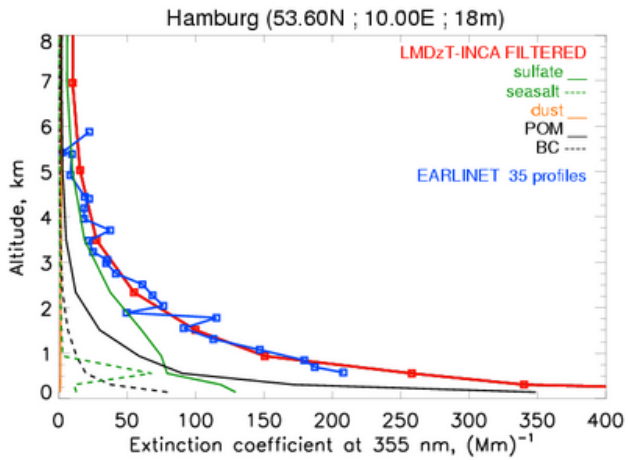
INCA only

PROFILE: yearly mean profiles model/obs



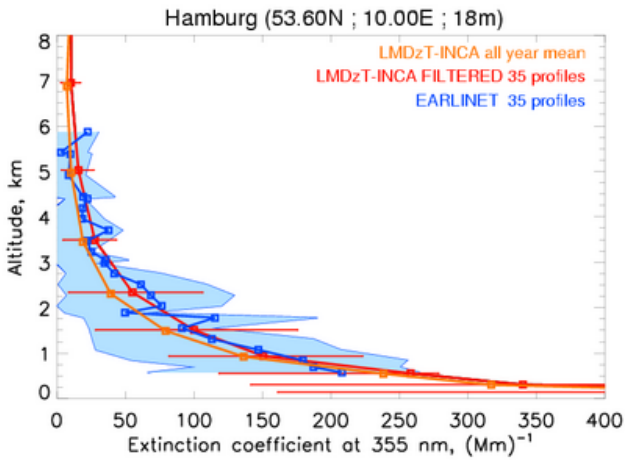
Yearly mean average

PROFILE



Model profiles at **measurements time** only
-> « filtered » profile

PROFILEFILT



Both modeled profiles
+ standard deviation

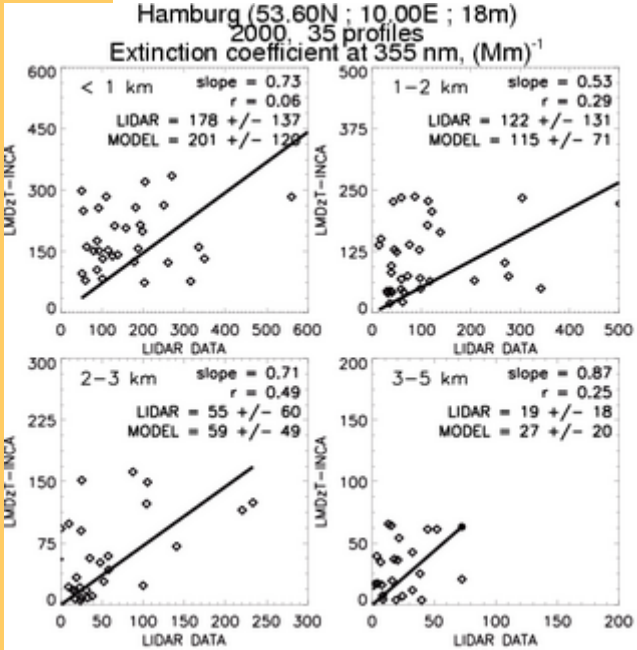
PROFILESTD

NAMES =
EC355_AER _an${year}_mALLYEAR_${station}_PROFILE.ps.png
EC355_AER _an${year}_mALLYEAR_${station}_PROFILEFILT.ps.png
EC355_AER _an${year}_mALLYEAR_${station}_PROFILESTD.ps.png

Plots (4) : EC355

INCA only

SCAT : scatterplot model versus obs for 4 layers



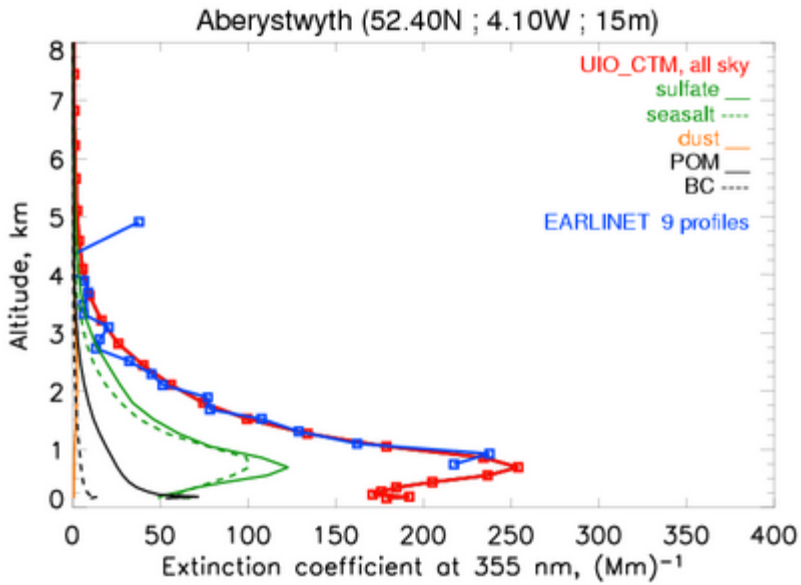
Take the different profiles measured at Hamburg
Modeled profiles at the same time
Mean value of EC per layer for each profile

NAME =
EC355_AER _an${year}_mALLYEAR_${station}_SCAT.ps.png
also SCATBIMO / SCATMO / SCATWE / SCATYE

Plots (5) : EC355

AeroCom models

PROFILE : yearly mean profiles model versus obs

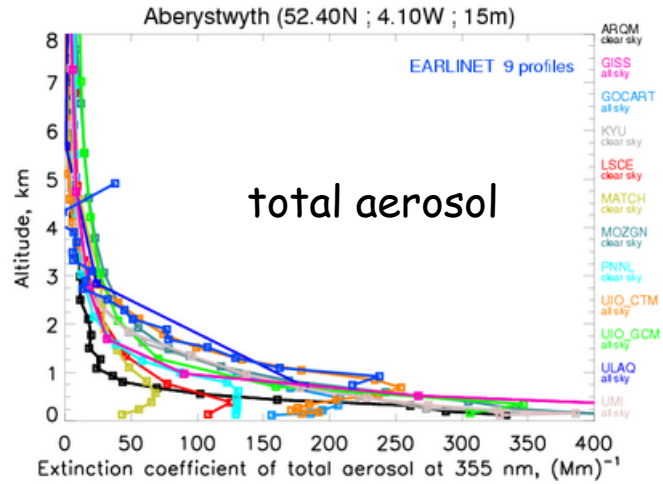


NAME =
EC355_AER _an${year}_mALLYEAR_${station}_PROFILE.ps.png

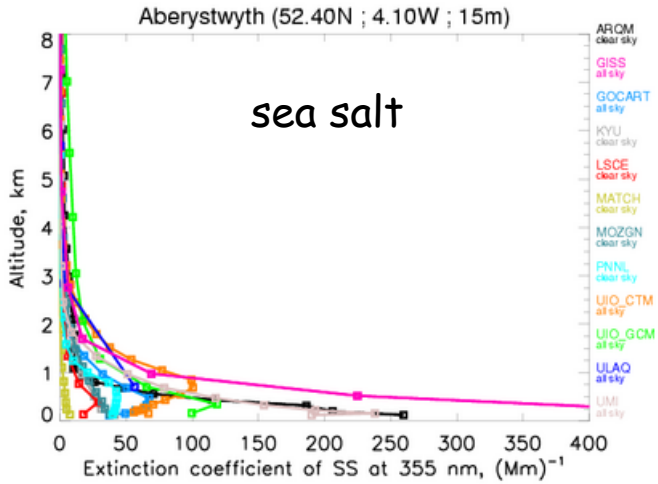
Plots (6) : EC355

All AeroCom models

PROFILE : yearly mean profiles model versus obs



Exists for total aerosol but also for each species (SO4, BC, POM, SS and DUST)

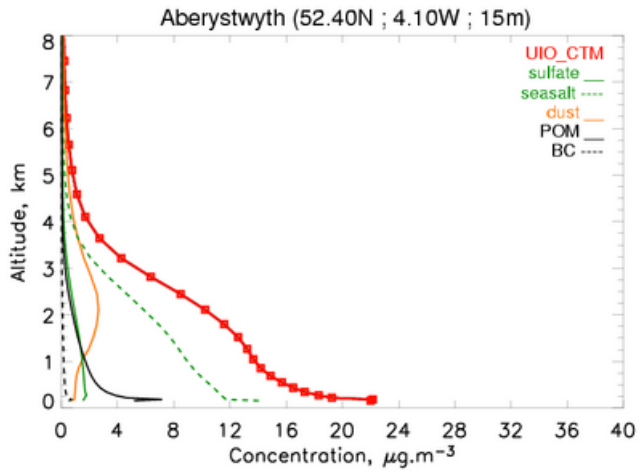


NAME = EC355_${SPECIES} _an${year}_mALLYEAR_${station}_PROFILE.ps.png

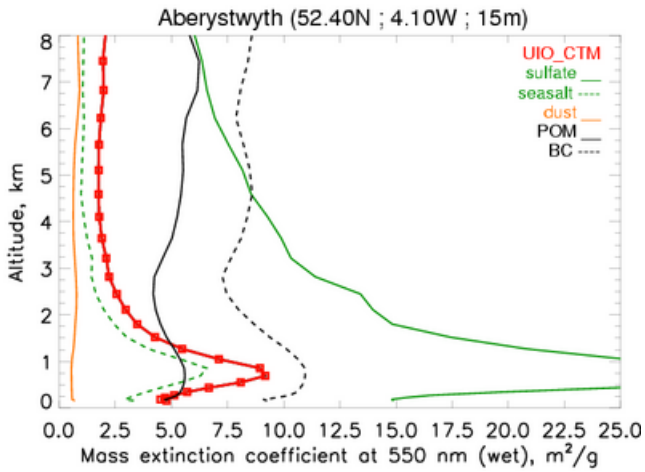
Plots (7) : CONC / MEC550

AeroCom models

PROFILE : yearly mean modeled profiles



CONC



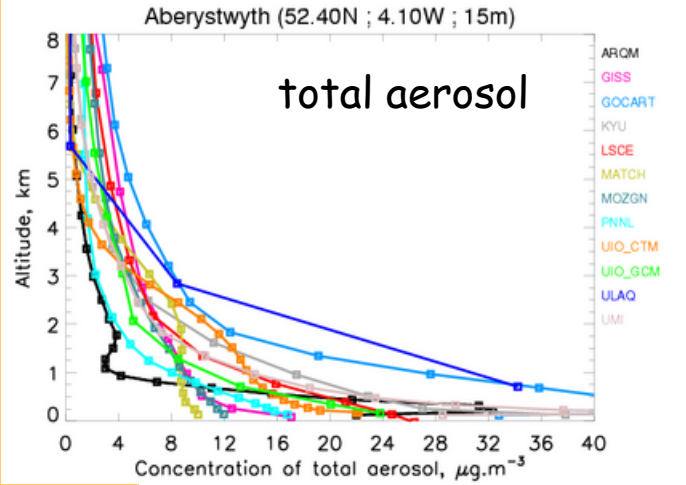
MEC

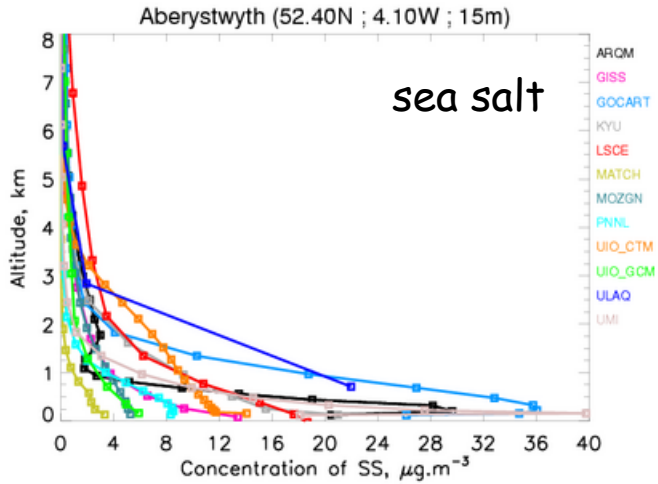
NAMES =
CONC_AER _an${year}_mALLYEAR_${station}_PROFILE.ps.png
MEC550_AER _an${year}_mALLYEAR_${station}_PROFILE.ps.png

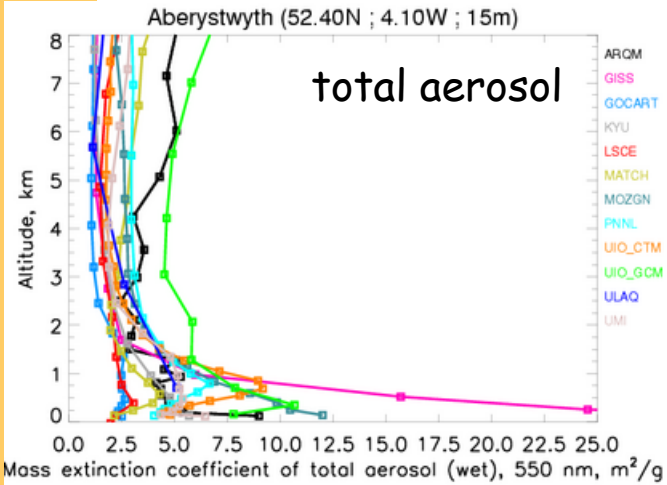
Plots (8) : CONC / MEC550

All AeroCom models

PROFILE : yearly mean modeled profiles







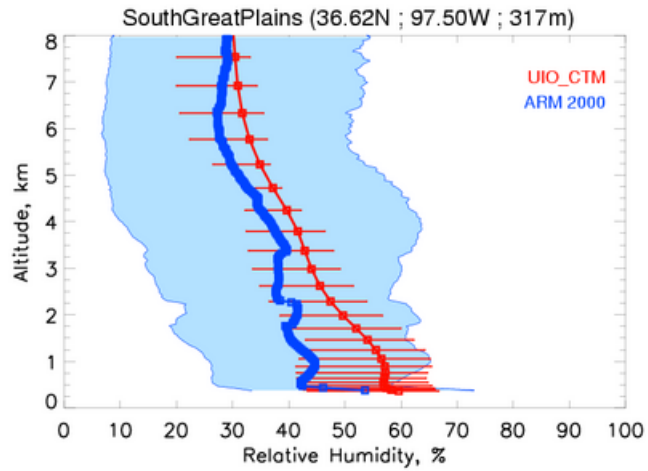
Exists for total aerosol but also for each species (SO4, BC, POM, SS and DUST)

NAMES =
CONC_${SPECIES} _an${year}_mALLYEAR_${station}_PROFILE.ps.png
MEC550_${SPECIES} _an${year}_mALLYEAR_${station}_PROFILE.ps.png

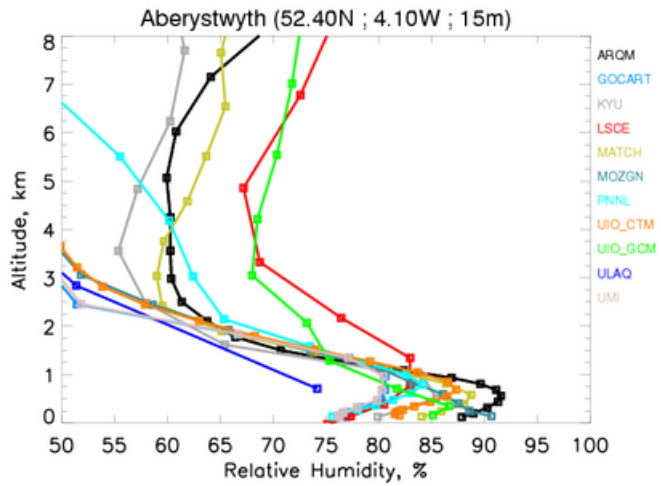
Plots (9) : Relative humidity RH

All AeroCom models

PROFILE : yearly mean profiles model versus obs



NAME =
RH_METEO _an${year}_mALLYEAR_${station}_PROFILE.ps.png

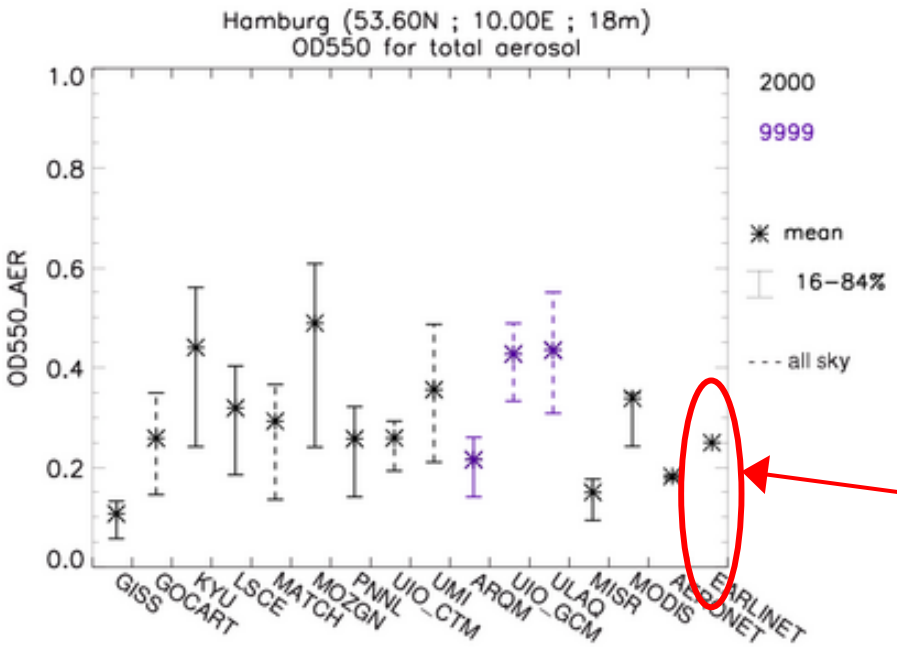


NAME =
RH_METEO _an${year}_mALLYEAR_${station}_PROFILE.ps.png

Plots (10) : OD550

All AeroCom models

STAT : compa of OD550 model versus obs

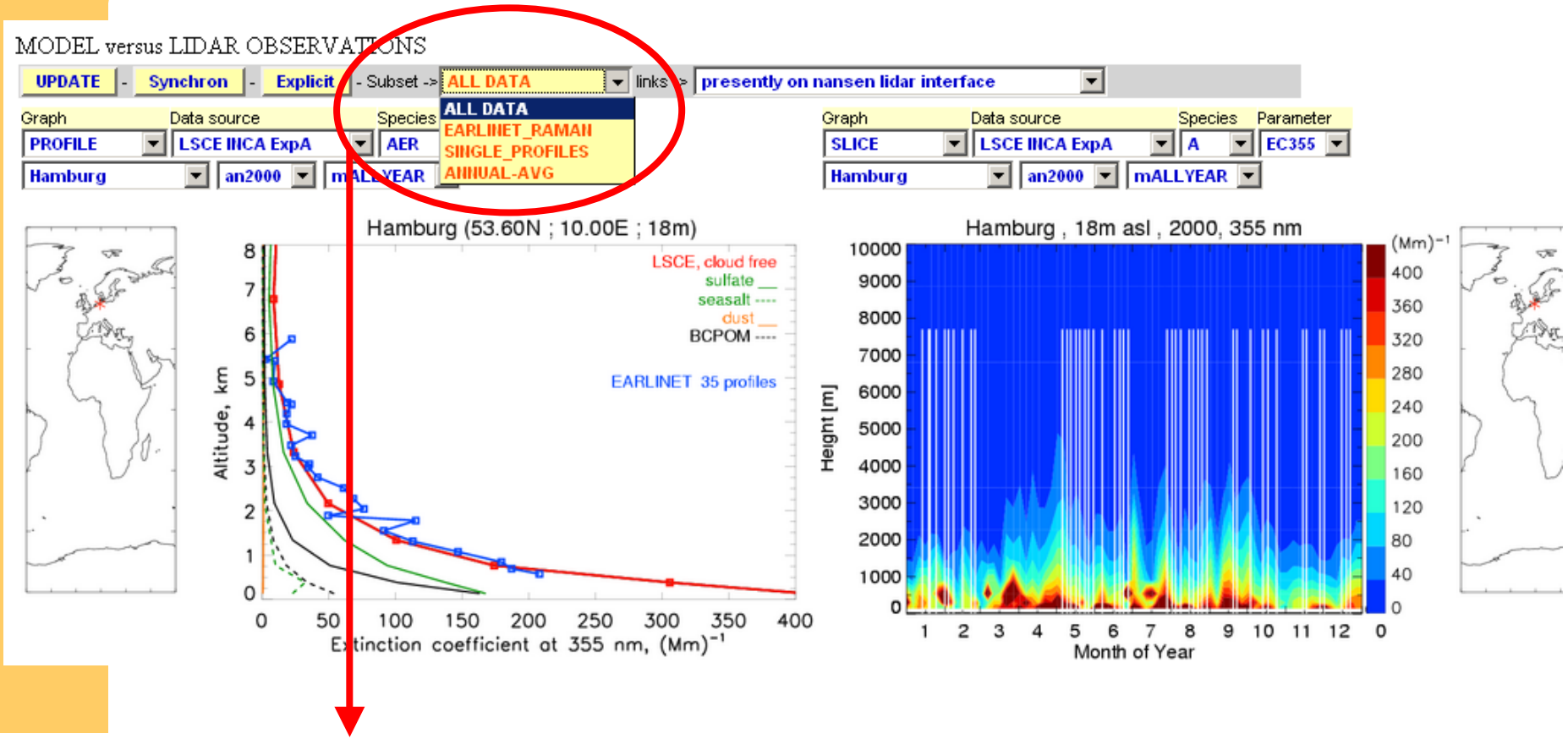


EC355 profile is converted
to OD355
then summed
then converted to 550 nm

NAME =
OD550_AER _an${year}_mALLYEAR_${station}_STAT.ps.png

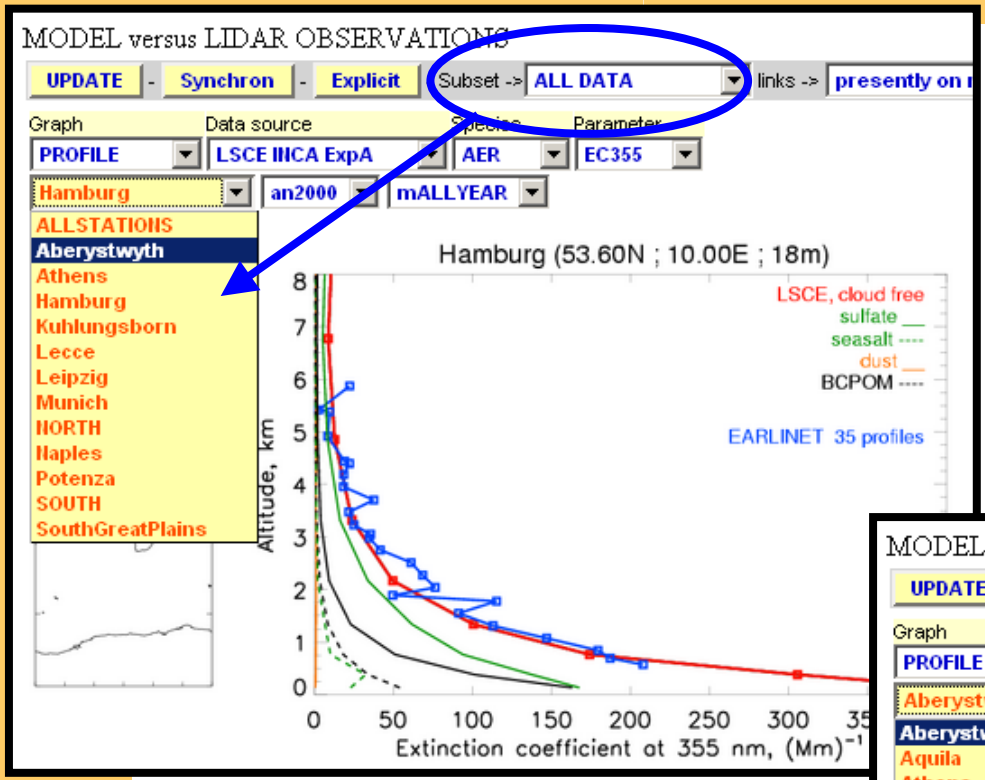
3. HOW TO USE THE WEB PAGE

Choice of subset of measurements (1)

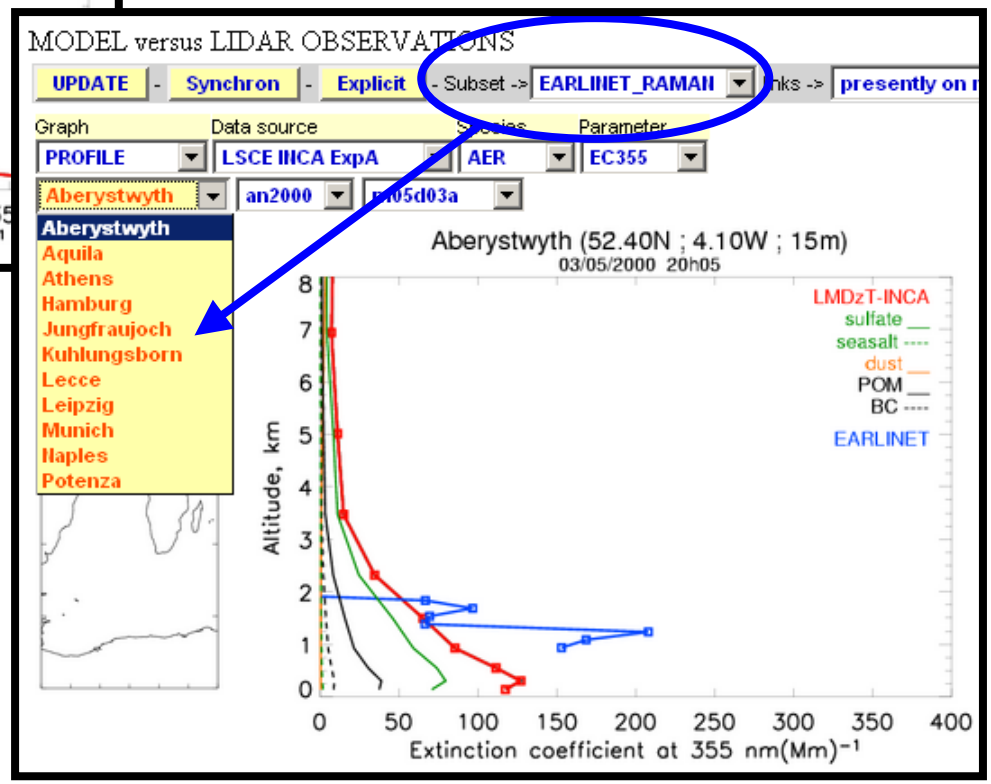


The « Subset » menu allows to restrict the list of stations to specific stations, i.e. EARLINET stations with Lidar Raman measurements or the stations where we have yearly mean average for each AeroCom model

Choice of subset of measurements (2)



Example of restricted list of stations



Basics principles for lidar interfaces

Standard categories used for any image :

[GRAPHTYPE]_[SPECIES]_[PARAMETER]_[REGION]_an[YEAR]_[PERIOD]

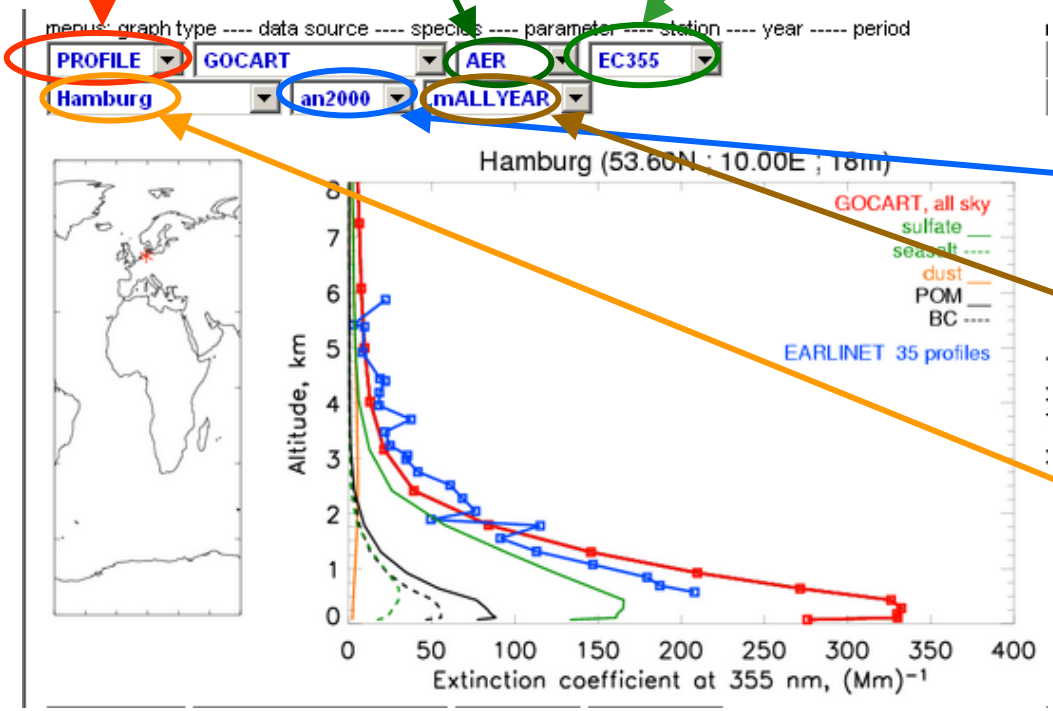
Choice of each « category » to see the corresponding graph

PROFILE
STAT
etc…..

AER
SO4
etc…

OD550
SCONCD
etc…

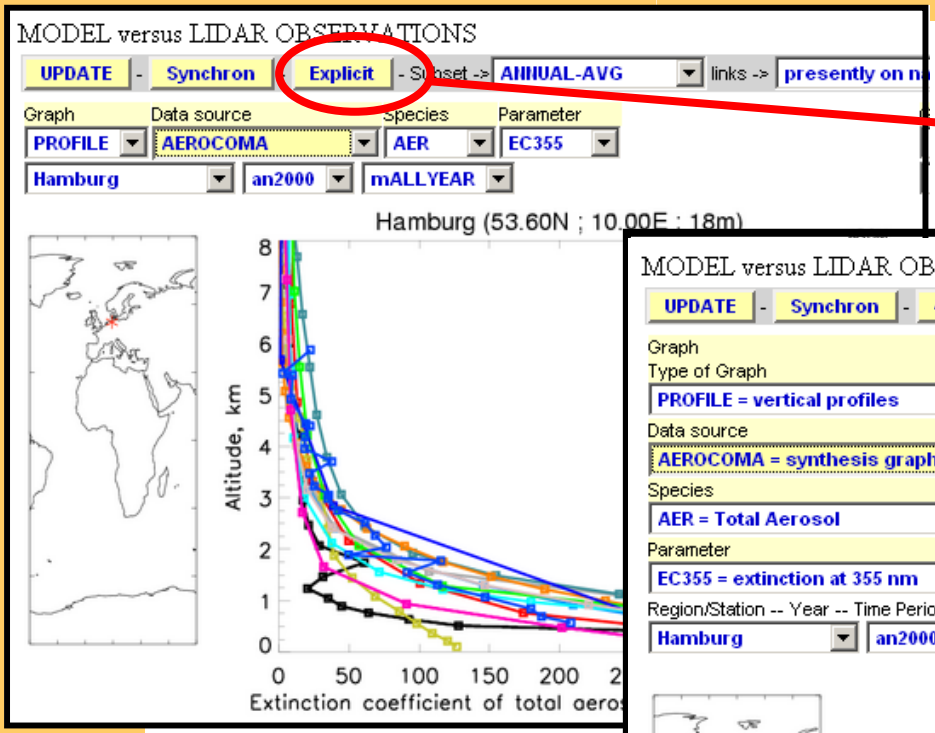
2000
2001
9999



mALLYEAR
or each month (m01,…)
or each day (m01d05,…)

Stations

Explicit description of graphs



Choice of « Explicit » lead to only one described image on the page